REMARKS

This application has been carefully reviewed in light of the Office Action dated November 28, 2005. Claims 12 to 53, and 68 to 98 have been cancelled herein, without prejudice or disclaimer of subject matter, claims 3, 4, 7, 8, 11, 54, 55 and 99 have been amended, and new claims 102 to 128 have been added. Claims 3 to 8, 11, 54 to 67, and 99 to 128 remain in the application, of which claims 54, 99, 102 and 122 are the independent claims. Reconsideration and further examination are respectfully requested.

Initially, applicant's representative thanks Examiner Dharia and Examiner Shankar for the thoughtful courtesies and kind treatment extended during the personal interview held on March 16, 2005.

Furthermore, the Examiner's indication that claims 92 to 95 contain allowable subject matter is acknowledged with appreciation.

In the Office Action, claims 99 and 100 were rejected under 35 U.S.C. § 102(e) over U.S. Patent No. 6,661,918 ("Gordon"); claims 3 to 8, 11, 12, 23, 54 to 70, and 101 were rejected under 35 U.S.C. § 103(a) over Gordon in view of U.S. Patent Application Publication No. 2004/0046736 ("Pryor"); claims 13 to 22, and 24 to 53 were rejected under 35 U.S.C. § 103(a) over Gordon in view of Pryor and U.S. Patent No. 6,125,198 ("Onda"); claims 71 to 91 and 96 to 98 were rejected under 35 U.S.C. § 103(a) over Pryor in view of Gordon and U.S. Patent Application Publication No. 2001/0033675 ("Maurer"). As indicated above, claims 12 to 53 and 68 to 98 have been cancelled herein, without prejudice or disclaimer of subject matter, and without conceding the correctness of the rejections. Withdrawal of the remaining rejections and further examination are respectfully requested.

Referring to specific claim language, independent claim 54 recites a stereo vision system for interfacing with an application program running on a computer, the stereo vision system including first and second video cameras arranged in an adjacent configuration and operable to produce at least first and second stereo video images, and a processor operable to receive the first and second stereo images and detect objects appearing in an intersecting field of view of the cameras. The processor executes a process to define an object detection region in three-

dimensional coordinates relative to a position of the first and second video cameras, divide the first and second stereo video images into features, and pair features of the first stereo video image with features of the second stereo video image. The processor further executes a process to generate a depth description map, the depth description map describing the position and disparity of paired features relative to the first and second images, generate a scene description based upon the depth description map, the scene description defining a three-dimensional position for each feature, and cluster adjacent features. Moreover, the processor further executes a process to crop clustered feature based upon predefined thresholds, analyze the three-dimensional position of each clustered feature within the object detection region to determine position information of a control object, and map the position information of the control object to a position indicator associated with an application program as the control object moves within the object detection region.

Independent claim 99 recites a method of using computer vision to interface with a computer. The method includes capturing at least first and second images of a scene, dividing the first and second images into features, and pairing features of the first image with features of the second image. The method also includes generating a depth description map, the depth description map describing the position and disparity of paired features relative to the first and second images, generating a scene description based upon the depth description map, the scene description defining a three-dimensional position for each feature, and clustering adjacent features. Furthermore, the method includes cropping clustered feature based upon predefined thresholds, defining an object detection region, analyzing the three-dimensional position of each clustered feature within the object detection region to determine position information of an object, and using the position information to control a computer application.

Independent claim 102 recites a method for video-based control of an application program. The method includes the steps of defining a region of interest, wherein the region of interest is within a field of view of an image detector, acquiring at least one image of the region of interest and a scene surrounding the region of interest, and producing a scene description based upon the at least one image. The method also includes the steps of defining an object

detection region within the region of interest based upon the scene description, measuring a position of an object within the object detection region, mapping the position of the object as a representation in the application program, and displaying the representation.

Independent claim 122 recites a system, including an image detector, a display, and a processor. The processor executes an application program and a process to define a region of interest, wherein the region of interest is within a field of view of the image detector, acquire at least one image of the region of interest and a scene surrounding the region of interest, produce a scene description based upon the at least one image, and define an object detection region within the region of interest based upon the scene description. The processor further executes a process to measure a position of an object within the object detection region, map the position of the object as a representation in an application program, and display the representation.

The applied art is not seen to disclose or to suggest the features of independent claims 54, 99, 102, or 122. In particular, the applied art is not seen to provide for at least the features of *i)* generating a depth description map, the depth description map describing the position and disparity of paired features relative to the first and second images and generating a scene description map based upon the depth description map, the scene description defining a three-dimensional position of each feature (claims 54 and 99) or *ii)* producing a scene description based upon the at least one image and defining an object detection region within the region of interest based upon the scene description (claims 102 and 122).

Gordon describes the segmentation of background and foreground objects in an image, in which image frames are compared with background statistics relating to range and normalized color, using sets of statistics in a complementary manner. *See* Gordon, col. 4, ll. 541 to 60; and Abstract. Although the Office Action asserts that Gordon teaches generating a scene description that includes an indication of a three-dimensional position of a feature in a scene, nowhere is it asserted that Gordon teaches the newly-clarified features of *i)* generating a depth description map, the depth description map describing the position and disparity of paired features relative to the first and second images and generating a scene description map based upon the depth description map, the scene description defining a three-dimensional position of each feature

(claims 54 and 99) or *ii)* producing a scene description based upon the at least one image and defining an object detection region within the region of interest based upon the scene description (claims 102 and 122). In particular, and as illustrated in Figure 2, the cited portion of Gordon is merely seen to describe that stereo imaging occurs, where each pixel is assigned an "intensity" value, the intensity value having one component (in a grey-scale color space), two components (in the UV color space) or three components (in the RGB, YUV, or HSL color spaces). Nowhere does the cited portion of Gordon, however, describe the generation of depth description maps, or scene descriptions, as is recited in the independent claims.

Pryor is not seen to remedy the deficiencies of Gordon. Gordon describes a method for inputting position, orientation and other characteristics into a computer using specialized datums on objects. *See* Pryor, ¶ [0034]; and Abstract. The Office Action asserts that Pryor teaches processing a stereo image to identify feature information and produce a scene description from a cluster of feature information, however Applicants respectfully assert that the cited passage does not teach the newly clarified features of the independent claims. Specifically, the cited paragraphs, paragraphs [0170] to [0173] describe a camera capturing a brightly colored right triangle on a different brightly colored background material, where "the background color and the triangle color *must* be two colors that are easily distinguished from the rest of the image." *See* Pryor, ¶ [0170] to [0173]. The use of datums is clearly distinguishable from the newly clarified features of *i)* generating a depth description map, the depth description map describing the position and disparity of paired features relative to the first and second images and generating a scene description map based upon the depth description map, the scene description defining a three-dimensional position of each feature (claims 54 and 99) or *ii)* producing a scene description based upon the at least one image and defining an object detection region within the region of interest based upon the scene description (claims 102 and 122).

Accordingly, based on the foregoing remarks, independent claims 54, 99, 102, and 122 are believed to be allowable over the applied references. The other rejected claims in the application are each dependent on these independent claims and are believed to be allowable for at least the same reasons. Because each dependent claim is deemed to define an additional

aspect of the invention, individual consideration of each on its own merits is respectfully requested.

No other matters being raised, it is believed that the entire application is fully in condition for allowance and such action is courteously solicited.

No fees are believed to be due at this time.

Respectfully submitted,

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